

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No. **3001DD-60387**

In re Application of:

PRADIP MITRA

Serial No. **09/976,559**

Filed: **12 OCTOBER 2001**

For: **PLANAR GEOMETRY BURIED
JUNCTION INFRARED DETECTOR
AND FOCAL PLANE ARRAY**

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§ Examiner: **SHUN K. LEE**
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§ Art Unit: **2878**
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§
§ Confirmation No. **1434**
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REPLY BRIEF

MAIL STOP: APPEAL BRIEF - PATENTS

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

The undersigned has been appointed by the Appellant to continue prosecution of the subject application. A Statement Under 37 C.F.R. 3.73(b), Revocation of Powers of Attorney and New Power of Attorney is being filed herewith.

In the Examiner's Answer mailed 7 April 2005 ("Answer"), the Examiner raised certain new points of argument. Accordingly, this Reply Brief is being filed pursuant to 37 C.F.R. § 41.41(a).

Certificate of Mailing Under 37 C.F.R. § 1.8(a)
Date of Deposit: <u>23 MAY 2005</u>
I hereby certify that this paper or fee is being deposited with the United States Postal Service as First Class Mail with sufficient postage under 37 C.F.R. §1.8(a) on the date indicated above and is addressed to Mail Stop: APPEAL BRIEF - PATENT, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.
By: <u>[Signature]</u>

REMARKS

THE TERM "PATTERN" IS GIVEN AN UNREASONABLE INTERPRETATION

In his Answer, the Examiner argues that the term "pattern" should be interpreted as "to furnish, adorn, or mark with a design," citing *Merriam-Webster's Collegiate Dictionary*, 10th Edition.¹ However, as discussed below, this definition is inconsistent with the interpretation of the term "pattern" that is understood by those skilled in the art of semiconductor fabrication, and this definition is also inconsistent with the use of the term "pattern" in the context of the specification. Therefore, the interpretation of the term "pattern" that is enlisted by the Examiner in his Answer is unreasonable and it cannot properly serve as a basis for rejecting the claims of the present Application.

The Manual of Patent Examining Procedure ("MPEP")² provides guidelines for examination of pending patent applications. Guidance for interpreting pending claims during examination is found in MPEP § 2111. There, the MPEP instructs that claims are to be examined based on the "broadest reasonable interpretation consistent with the specification."³ Thus, while the claims should be broadly interpreted, the breadth given a claim should be tempered according to what breadth is reasonable in light of the specification. The MPEP further instructs that "[c]laim terms are presumed to have the ordinary and customary meanings attributed to them by those of ordinary skill in the art."⁴

Thus, the MPEP accounts for the fact that many words and phrases can have different meanings depending on the context in which they are used and, in many cases, such meanings are industry-specific and readily understood to be the intended meaning when used among those skilled in the art of a given industry. For example, the word "plane" when used in one context would be understood to mean a hand tool, but when used in another context would be understood to mean an aircraft. The word "hole" is generally understood to mean an opening of some kind, but has a special meaning related

¹ Answer, page 9, lines 20-21.

² All references to the MPEP in this paper refer specifically to MPEP, 8th Edition, Revision 2 (May 2004).

³ MPEP 2111, citing *In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000), (emphasis added).

to valence-band electrons that is understood by those skilled in the art of semiconductors. So it would be unreasonable to interpret words in claims to include meanings that ignore context and/or ignore special significance appreciated by those skilled in the given art.

In the present case, several of the pending claims recite “forming a patterned doping layer” (claims 1, 28) or “patterning the doping layer” (claims 6, 20, 33, 47). The specification clearly uses the term “patterning” to mean a material removal process. For example, in a disclosed embodiment “patterning” is equated to “etching”:

After formation of layers 14, 16, 18, 20, and 21, doping layer 21 is *patterned* to provide doped mesa 23 as shown in Figure 5. P-doped layer 21 is *etched* using a photolithographically formed mask (not shown) and known wet etching techniques. The mask is then removed and *resulting structure of Figure 5* is then annealed....⁵

Such patterning of a layer can be clearly seen by comparing the views provided by Figures 4 and 5. The patterning causes a portion of the layer 21 in Figure 4 to be removed, resulting in the mesa 23 shown in Figure 5. Thus, the term “pattern” and its alternate forms “patterning” and “patterned”, when considered in the context of the specification, clearly refer to selective material removal. In the claims, therefore, a “patterned” layer is one in which at least some portion of the layer has been removed and “patterning” a layer refers to removal of at least some portion of the layer.

This interpretation of “pattern” is consistent with the special meaning understood by those skilled in the art of semiconductors, particularly when used in the context of semiconductor manufacturing processes. When the term “patterning” is used in connection with a semiconductor fabrication process performed on a layer of semiconductor material, those skilled in the semiconductor art are not left to wonder whether the layer was etched or the like, or instead provided with a design of some kind. Rather, those skilled in the semiconductor art readily understand that “patterning” means a material-removal process is being performed, for example involving masking and selective removal of some material.

⁴ MPEP 2111.01(II).

⁵ Specification, paragraph 23.

So, while it is true that the term “pattern” is defined by some dictionaries based on a more general meaning, the MPEP specifically points out that it is improper to interpret a term, such as “pattern” in the present claims, based on the more general meaning when it would be inconsistent with the use of the term in the art and in the context provided by the specification:

In construing claim terms, the general meanings gleaned from reference sources, such as dictionaries, must always be compared against the use of the terms in context, and the intrinsic record must always be consulted to identify which of the different possible dictionary meanings is most consistent with the use of the words by the inventor.⁶

Thus, if a source such as a dictionary or other reference is to be consulted for interpreting the claim terms, a source should be selected that provides for a definition that is consistent with the subject matter of the specification and the meanings understood by those skilled in the related arts. In the present case, the dictionary selected by the Examiner provides only a general definition that does not fit the context of the present claims.

Therefore, for the reasons stated above, Appellant respectfully submits that the Examiner’s interpretation of the term “pattern” is not a “reasonable interpretation” of the claim language. Accordingly, the allegation by the Examiner that Cockrum *et al.* (U.S. Patent No. 4,956,304) (“Cockrum”) teaches driving dopant from a *patterned* source layer 30 formed *above* the passivation layer 18 is based on an improper interpretation of the term “pattern.” This allegation is therefore respectfully traversed for the reasons stated above and for the reasons set forth in the Appeal Brief. Specifically, even if the diffusion step is accomplished before removal of the mask layer 26, in other words in the configuration shown in Figure 4E of Cockrum, it is clear that the source layer 30 is a continuous layer rather than a patterned layer. Therefore, Cockrum fails to disclose or suggest driving dopant through a patterned layer that is above a passivation layer as recited in several of the pending claims, including independent claims 1, 6, 20, 28, 33, and 47.

⁶ MPEP 2111.01(II).

CONCLUSION:

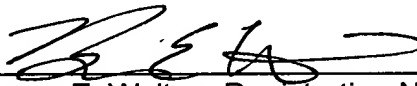
In view of the foregoing reasons and the reasons stated in Appellant's Appeal Brief, Appellant respectfully requests the Board of Patent Appeals and Interferences to reverse the Examiner's rejections as to all of the appealed claims.

No fees are deemed to be necessary; however, the undersigned hereby authorizes the Commissioner to charge any fees which may be required, or credit any overpayments, to Deposit Account No. 502806.

Please link this application to Customer No. 38441 so that its status may be checked via the PAIR System.

Respectfully submitted,

23 MAY 2005
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